

**METHOD AND SYSTEM FOR RECEIVING AND TRANSMITTING  
SIGNALS IN A CELLULAR RADIO NETWORK**

**ABSTRACT OF THE DISCLOSURE**

[0053] A method for receiving and transmitting signals in a cellular radio network. The method comprising receiving a plurality of radio signals at different frequencies using a single radio receiver at the base station, scanning the incoming signals and saving the signals to a buffer with a first processor, reading, processing and time-multiplexing the buffered signals with a second processor, transmitting the time-multiplexed radio signal via a single physical link to a mobile switching center, demultiplexing the time-multiplexed radio signal into independent radio signals corresponding to the incoming signals at the mobile switching center with a third processor;, processing the independent radio signals with the third processor; and routing the independent radio signals to the proper end users.